

September 16, 2014

Ms. Stephanie Linebaugh U.S. EPA – Region 5 77 West Jackson Blvd (SR-6J) Chicago, Illinois 60604-3590

RE: Sauget Area 2 Site – October 3, 2002 Unilateral Administrative Order Groundwater Operable Unit

Dear Stephanie:

Attached, is the June 2014 Quarterly Groundwater Monitoring Event Report for the GMCS.

Any questions, please advise.

Sincerely,

Steven D. Smith Project Coordinator

cc: Lisa Cundiff – CH2M Hill

Paul Lake – Illinois EPA (2 copies)

Bill Johnson - Solutia

US EPA RECORDS CENTER REGION 5

512701



September 4, 2014

Project No.: 063-9678

Mr. Bill Johnson – 2N Solutia Inc. 575 Maryville Centre Drive St. Louis, MO 63141

RE:

JUNE 2014 QUARTERLY GROUNDWATER MONITORING EVENT SAUGET AREA 2 – SITE R, SAUGET, ILLINOIS

Dear Mr. Johnson:

Golder Associates Inc. (Golder) is pleased to submit this letter report to Solutia Inc. (Solutia) summarizing the June 2014 Quarterly Groundwater Monitoring Event at Sauget Area 2 – Site R (Site). At the request of Solutia, Golder conducted the quarterly sampling event at the Site from June 23, 2014 through June 26, 2014. The work included the collection of groundwater samples from the 12 monitoring wells in accordance with the Field Sampling Plan (FSP; URS, 2003). This letter summarizes the work performed during the quarterly event and includes Detection Summary Tables (Appendix A) and the Data Validation Report (Appendix B). The Lenexa, Kansas and St. Rose, Louisiana locations of Pace Analytical Services, Inc. (Pace Analytical) performed analytical testing of the groundwater samples. Laboratory reports are not included in this letter report. Laboratory reports were forwarded directly from Pace Analytical to Solutia.

GROUNDWATER SAMPLING

Groundwater samples were collected from four monitoring well clusters. Each well cluster consists of three two-inch diameter wells, with one well screened in the Shallow Hydrogeologic Unit, one well screened in the Middle Hydrogeologic Unit, and one well screened in the Deep Hydrogeologic Unit. Groundwater was purged and sampled from the 12 wells with a centrifugal positive pressure pump and dedicated polyethylene tubing. Field measurements of pH, specific conductivity, turbidity, and temperature were recorded for all groundwater samples. Purging continued until the turbidity reached or fell below five nephelometric turbidity units (NTUs), or stabilization of field parameters was achieved for one hour, whichever occurred first. Prior to the purging and sampling of the monitoring wells, a synoptic round of water level measurements of the 12 wells was completed.

Groundwater samples were collected directly into laboratory-provided, pre-preserved sample bottles and packed on-Site following chain-of-custody protocol. The following laboratory tests were requested for the groundwater samples and associated quality assurance/quality control (QA/QC) samples:

- Volatile Organic Compounds (United States Environmental Protection Agency USEPA Method 8260B)
- Semi-Volatile Organic Compounds (USEPA Method 8270C)
- Organochlorine Pesticides (USEPA Method 8081A)
- Chlorinated Herbicides (USEPA Method 8151A)
- Metals (USEPA Method 6010B/7470A)
- Total Organic Carbon (SW846 Method 9060/SM 5310C)



Total Dissolved Solids (USEPA Method 160.1/SM 2540C)

After collection, the groundwater samples were delivered to the Pace Analytical Service Center in Florissant, Missouri. The samples to be analyzed for volatile organic compounds, semi-volatile organic compounds. metals, total organic compounds, total dissolved solids, and general chemistry parameters were transported to the Lenexa, Kansas laboratory via courier. The samples to be analyzed for chlorinated pesticides were shipped for next day delivery to the St. Rose, Louisiana facility by the Pace Analytical Service Center in Florissant, Missouri. The samples to be analyzed for chlorinated herbicides were shipped for next day delivery to the TestAmerica Savannah, Georgia facility by the Pace Analytical Service Center in Florissant, Missouri.

Groundwater samples were designated by the well number. QA/QC samples consisted of two field duplicates (DUP-1 and DUP-2) collected at BWMW-4M and BWMW-2M, respectively, a matrix spike and matrix spike duplicate (MS/MSD) collected at BWMW-1M, two rinsate blanks (RB-1 and RB-2) collected following the collection of samples at BWMW-3S and BWMW-1M, two field blanks (FB-1 and FB-2), and two trip blanks. Level III data validation was performed on all the analytical data packages, and Level IV data validation was performed on ten percent of the analytical data packages. Some analytical data were qualified; however, no data were rejected.

Sampling equipment was decontaminated prior to mobilizing to the Site, between sample locations, and prior to demobilizing from the Site. Non-dedicated sampling equipment was decontaminated between samples with non-phosphatic detergent solution and a potable water sprayer. Purged groundwater and decontamination water were containerized in an on-Site vertical storage poly-tank.

Work was performed in general accordance with the January 31, 2003 Sauget Area 2 Groundwater Migration Control System FSP and Quality Assurance Project Plan.

Please contact us if you have any guestions about the work or require additional information.

Sincerely.

GOLDER ASSOCIATES INC.

mol Dehake

Amanda W. Derhake, Ph.D., P.E.

Project Environmental Engineer

Mark N. Haddock, R.G., P.E.

Mach N. efallat

Associate, Senior Geological Engineer

Attachments

Appendix A – Detection Summary Tables

Appendix B – Data Validation Report



APPENDIX A

DETECTION SUMMARY TABLES

Table 1 Summery of Validated Groundwater Sample Data - Organica (June 2014 Sampling Event) Ster R Cusariary Groundwater Monitoring Solutia inc - Souger, linous

1									MOL		MDL		MDL
Monitoring Well		BWMW-18	MDL	BWMW-1M	MDL	BWMW-1D	MDL	BWMW-28	MDL	BWMW-2M	MDL	BWMW-2D	MUL
Lab Sample ID		60172573005		60172573008		60172573007		60172573002		60172573003		60172573004	
Date Sampled		6/26/2014		5/25/2014		6/26/2014		6/25/2014		6/25/2014		6/25/2014	
Time Sampled		11 58		9 40		10 28		10 30		14 10		14 35	
Volatile Organic Compounds (USEPA Moti	hod 82609}												
Date Prepared													
Date Analyzed	· · ·	7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014	
Analyto	CAS No	(ug/L)		(Ug/L)		(ug/L)		(ug/l)		(up/L)		(ug/L)	
Benzene	71-43-2	2,560	500	781	250	50 0 U	50 0	49	10	354	125	366	25 0
Chlorobenzene	108-90-7	148,000	500	3,430	25 0	6,640	50 0	183	10	2,270	125	4,200	25 0
Ethylbenzene	100-41-4	500 U	500	25 0 U	25 0	50 O U	50 0	10U	10	127 J	125	100	25 0
Methylene Chlonde	75-09-2	500 U	500	25 0 U	25,0	50 O U	50,0	10 U	10	12 5 U	125	25 0 U	25 0
Toluene	108-88-3	500 U	500	25 0 U	250	50 O U	50 0	100	10	12 5 U	12 5	30 5 J	25 0
Xylenes Total	1330-20-7	1 500 U	1 500	75 O U	750	150 U	150	30 U	30	37 5 U	37 5	229	75 0
Semi-Volatile Organic Compounds (USEP)	A Method 8270C)									-			
Date Prenared		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014	
Date Analyzed		7/7/2014		7/7/2014		7/7/2014		7/7/2014	_	7/7/2014		7/7/2014	
Analyte	CAS No	(up/L)		(ug/L)	-	(ug/L)	-	(ug/L)		(up/L)		(ug/L)	
1,2-Dichlorobenzene	95-50-1	31 1	0.55	055 U	0.55	18 J	0 55	17 1	0.55	35 3	0 55	495 J	5.5
1,3-Dichlorobenzena	541-73-1	094U	0 94	12 J	094	0 94 U	0 94	0 94 U	0.94	39 /	094	177 J	9 4
1.4-Dichlorobenzene	108-46-7	78 3	0.69	79 J	0.89	85 J	0 69	0690	0.69	38 0	0.69	217	69
2,4-Dimathylphenol	105-67-9	110	11	110	11	110	11	110	11	11U	11	103	106
2-Chlorophenol	95-57-8	84.6	0 93	22 3	0 93	28	0 93	0 93 U	0 93	0 93 U	0 93	9310	93
4-Chiaroshiline	108-47-8	76.6		178 D	28	16 J	0 56	23 /	0 56	6,350 D	560	30,900 D	280
Bis(2-ethylhexyl) phthalate	-117-81-7	28U	0.56		28	28U	28	280	28	39 J	28	28 0 U	28 0
		2 alu	28	28U	26	2810	20	200	_ 20	393	40	26 0 0	200
Organochiorino Pesticides (USEPA Metho	d 8081A)	1					_	740044		7/1/2014		7/1/2014	
Date Prepared		7/2/2014		7/2/2014		7/2/2014		7/1/2014 7/11/2014		7/11/2014		7/11/2014	
Date Analyzed	CAS No	7/3/2014		7/3/2014		7/3/2014		//11/2014 (up/L)		//11/2014 (ug/L)		//11/2014 {ug/L}	
4.4-DDD	72-54-8	(ug/L)	0.050	0 050 U	0 050	(13g/L) 0 050 U	0 050	0 050 U	0 050	0 050 U	0.050	0 088 L	_ 0 050
4.4-DDE	72-55-8	0.050 U	0.050	0.050 U	0 050	0 050 U	0 050	0 050 U	0 050	0.050 U	0 050	030 P	0.050
4,4-DDT	50-29-3	0 050 U	0 050	0.050 U	0 050	0 050 U	0 050	0 050 U	0 050				
Aldrin	1 20-52-3	0 00000	U UOU										n neni
	900 00 0	0.005								0 050 U	0.050	0 050 U	0 050
	309-00-2	0 025 U	0 025	0 025 U	0 025	0 025 U	0 025	0 025 U	0 025	0 025 U	0 025	0 025 U	0 025
alpha-BHC	319-84-6	0 025 U	0 025	0 025 U 0 025 U	0 025 0 025	0 025 U 0 025 U	0 025 0 025	0 025 U 0 025 U	0 025 0 025	0 025 U 0 025 U	0 025 0 025	0 025 U 0 025 U	0 025 0 025
alpha-BHC alpha-Chlordane	319-84-6 5103-71-9	0 025 U 0 025 U	0 025 0 025	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025	0 025 U 0 025 U 0 054 P	0 025 0 025 0 025
alpha-BHC alpha-Chiordane beta-BHC	319-84-6 5103-71-9 319-85-7	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 033 J	0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 054 P 0 025 U	0 025 0 025 0 025 0 025
alpha-BHC alpha-Chlordane beta-BHC delta-BHC	319-84-6 5103-71-9 319-85-7 319-88-8	0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 033 J 0 025 U	0 025 0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 070	0 025 0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025	0 025 U 0 025 U 0 054 P 0 025 U 0 081 P	0 025 0 025 0 025 0 025 0 025
alpha-BHC alpha-Chlordane beta-BHC detta-BHC Deldrin	319-84-6 5103-71-9 319-85-7 319-86-8 60-57-1	0 025 U 0 025 U 0 025 U 0 025 U 0 050 U	0 025 0 025 0 025 0 025 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 070 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050	0 025 U 0 025 U 0 054 P 0 025 U 0 027 P 0 81	0 025 0 025 0 025 0 025 0 025 0 050
alpha-BHC alpha-Chlordane beta-BHC delta-BHC Deldrin Endosultan I	319-84-8 5103-71-9 319-85-7 319-86-8 60-57-1 959-98-8	0 025 U 0 025 U 0 025 U 0 025 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 070 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 14 JP 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 025	0 025 U 0 025 U 0 054 P 0 025 U 0 007 P 0 81	0 025 0 025 0 025 0 025 0 025 0 050 0 025
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alpha-BHC alpha-Chlordane beta-BHC Deldrin Endoeulfan I Endoeulfan II Endoeulfan suitste	319-84-8 5103-71-9 319-85-7 319-86-8 60-57-1 959-98-8 33213-85-9 1031-07-8	0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050	0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 070 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 026 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 14 JP 0 025 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050	0 025 U 0 025 U 0 056 P 0 025 U 0 081 P 0 81 0 15 P 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050
alpha-BHC alpha-Chlordane beta-BHC deta-BHC Deldrin Endosulfan I Endosulfan sulfete Endre Service Serv	319-84-6 5103-71-9 319-85-7 319-86-8 60-57-1 959-98-8 33213-85-9 1031-07-8 72-20-8	0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050	0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 026 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050	0 025 U 0 025 U 0 084 P 0 025 U 0 081 P 0 15 P 0 050 U 0 11 P	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050
alpha-BHC alpha-Chlordane beta-BHC Deldrin Endosulfan I Endosulfan II Endosulfan sulfete Endrin Endosulfan Sendosulfan Sendosu	319-84-6 5103-71-9 319-85-7 319-86-8 60-57-1 959-98-8 33213-85-9 1031-07-8 72-20-8 58-59-9	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050	0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050	0 025 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 026 U 0 026 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 14 JP 0 025 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 084 P 0 025 U 0 081 P 0 81 P 0 15 P 0 050 U 0 11 P 0 18 P	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050
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alpha-BHC alpha-Chlordane beta-BHC detta-BHC Deldrin Endosulfan I Endosulfan sulfete Endri	319-84-6 5103-71-9 319-85-7 319-86-8 60-57-1 959-98-8 33213-85-9 1031-07-8 72-20-8 58-59-9	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 033 J 0 025 U 0 003 J 0 005 U 0 050 U 0 050 U 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 026 U 0 026 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U	0 025 0 025 0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 P 0 025 U 0 091 P 0 031 P	0 025 0 025 0 025 0 025 0 025 0 050 0 026 0 050 0 050 0 050 0 025 0 025
alpha-BHC alpha-Chlordane beta-BHC Deldrin Endosulfan II E	319-84-6 5103-71-9 319-85-7 319-86-8 60-57-1 955-98-8 33213-85-9 1031-07-8 72-20-8 58-80-9 5103-74-2	0 025 U 0 050 U 0 025 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 025 0 025	0 025 U 0 050 U 0 050 U 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 025 0 025	0 025 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 026 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 026 U 0 070 0 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 026	0 025 U 0 14 JP 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 U 0 084 P 0 025 U 0 087 P 0 97 P 0 97 P 0 11 P 0 11 P 0 11 P 0 11 P 0 12 P	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050
alpha-BHC alpha-Chlordane beta-BHC deta-BHC Deltrin Endosulfan II Endosulfan II Endosulfan SHE Endrin gemma-BHC (Lindane) gemma-Chlordane	319-84-6 5103-71-9 319-85-7 319-85-7 319-86-8 60-57-1 959-98-8 33213-65-9 1031-07-8 72-20-8 58-59-9 5103-74-2 78-44-8 1024-57-3	0 025 U 0 050 U	0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 025 0 025	0 025 U 0 025 U 0 025 U 0 033 J 0 025 U 0 003 J 0 005 U 0 050 U 0 050 U 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 025 0 025 0 025	0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 025 U 0 050 U 0 050 U 0 050 U 0 050 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U	0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U	0 025 0 025 0 025 0 025 0 025 0 025 0 025 0 050 0 050 0 050 0 050 0 050	0 025 U 0 025 U 0 025 P 0 025 U 0 091 P 0 031 P	0 025 0 025 0 025 0 025 0 025 0 050 0 026 0 050 0 050 0 050 0 025 0 025
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Parameters not listed were not detected in samples
Results in bold Italics denote detections
MDL. Method Detection Limit
Flags and Qualifiers
U - Analyte was not detected at or above the Method Detection Limit (MDL)
Least it is no estimated to a solve the Method Detection Limit (MDL)

U - Assult is an estimated value

JP - Result is an estimated value

JP - Result is an estimated value. The lower of the two values is reported when the % difference between the results of two GC

columns a greater than 40%

P - The lower of the two values is reported when the % difference between the results of two GC columns is greater than 40%

D - Compound analyzed at a dilution

JD - Compound analyzed at a dilution result is an estimated value

Date 07/17/2014 Date 07/18/2014 Date 06/21/2014 Prepared by LAB Checked by EPW Reviewed by AWD

Prepared by LAB Checked by EPW Reviewed by AWD AFOS/AFIVO edecine AFOS/AFIVO ed

J. Rewill a an estimated value 19. Feasilit as realizate value. The lower of the two values as reported when the % difference between the results of two GC columns is greater than 40% p. The lower of the brease is reported when the % difference between the results of two GC columns is greater than 40% p. Compound stratyzed at a dilution.
D. Compound stratyzed at a dilution, result is an estimated value.

U - Analyte was not detected at or above the Method Detection Limit (MDL)

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Summary of Vollabated Groundwater Sample Date - Organics (June 2014 Sampling Event)
Sate R Questrary Groundwater Monitoring
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Table 2 Summary of Validated Groundwater Sample Data - Inorganics (June 2014 Sampling Event) Site R Quarterly Groundwater Montioning Solutia Inc. - Sauget, Illinois

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Monitoring Well		BWMW-18	MDL	BWMW-1M	MDL.	BWMW-1D	MDL	BWMW-28	MDL	BWMW-2M	MDL	BWMW-2D	MÐL
Lab Sample ID		60172573005		60172573006		60172573007		60172573002		60172573003		60172573004	
Date Sampled	-	6/26/2014		6/26/2014		6/26/2014		8/25/2014		6/25/2014		6/25/2014	
Time Sampled		11 56		9 40		10 26		10 33		14 10		14 35	
Mercury (USEPA Method 7470A)													
Date Prepared		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014	
Date Analyzed		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014	
Analyte	CAS No.	(ug/L)											
Mercury	7439-97-6	0 022 U	0 022										
Metals (USEPA Method 6010B)													
Date Prepared		6/30/2014		6/30/2014		6/30/2014		6/30/2014		6/30/2014		6/30/2014	
Date Analyzed		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014	
Analyte	CAS No.	(ug/L)											
Arsenic	7440-38-2	78.0	34	40 J	34	47 J	34		34	34 J	34	69 J	34
Benum	7440-39-3	240	0 61	503	0 61	430	0 61	278	0 61	963	0 61	2,180	0.61
Cadmium	7440-43-9	0 56 U	0 56	0 58 U	0.58	0 56 U	0 56	0 56 U	0 56	0 58 U	0 56	0 56 U	0.56
Chromium	7440-47-3	2 2 J	0 89		0 89	15 J	0 89	40 J	0 89	22 J	0.89	16 J	0.89
Copper	7440-50-8	0 85 U	0 85	0 85 U	0 85	0 85 U	0 85	12 J	0 85	0 95 J	0 85	0 85 U	0 85
Lead	7439-92-1	5 9	22	41 J	22	34 J	22	70	22	39 J	22	47 J	22
Nickel	7440-02-0	14 J	0 95	12 J	0 95	11 J	0 95	20 J	0 95	18 J	0 95	5.2	0 95
Selenium	7782-49-2	190	1.9	1 9 U	19	19U	19	19U	19	1 B U	19	19 J	19
Total Dissolved Solids (USEPA Method 16	0 1/SM 2540C)												
Date Analyzed		7/1/2014		7/1/2014		7/1/2014		7/1/2014		7/1/2014		7/1/2014	
Analyte	CAS No	(mg/L)											
Total Dissolved Solids (TDS)	•	1,350	50		50	996	50		50	946	50	1,650	50

Parameters not listed were not detected in samples

Results in bold italies denote detections

MDL - Method Detection Limit

Flags and Qualifiers

U - Analyte was not detected at or above the Method Detection Limit (MDL)

J - Result is an estimated value

Prepared by LAB Checked by EPW Reviewed by AWD Date 07/17/2014 Date 07/18/2014 Date 08/21/2014

Table 2 Summary of Validated Groundwater Sample Data - Inorganics (June 2014 Sampling Event) Site R Quarterly Groundwater Monitoring Solutia Inc - Sauget Illinois

									$\overline{}$		1		$\overline{}$
Monitoring Well		BWMW-35	MDL	BWMW-3M	MDL	BWMW-3D	MDL	BWMW-4S	MDL	BWMW-4M	MDL	BWMW-4D	MDL
Lab Sample ID		60172573001		80172342006		60172342007		60172342003		60172342004		60172342005	
Date Sampled		6/25/2014		6/24/2014		6/24/2014		6/23/2014		6/24/2014		6/24/2014	
Time Sampled		8 43		13 18		14 03		15 50		9 55		10 55	
Mercury (USEPA Method 7470A)													
Date Prepared		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014	
Date Analyzed		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014	
Analyta	CAS No	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
Mercury	7439-97-6	0 022 U	0 022	0 022 U	0 022	0 022 U	0 022						
Metals (USEPA Method 6010B)													
Date Prepared		6/30/2014		6/27/2014		6/27/2014		8/27/2014		8/27/2014		6/27/2014	
Date Analyzed		7/3/2014		7/1/2014		7/1/2014		7/1/2014		7/1/2014		7/1/2014	
Analyte	CAS No	(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)		(ug/L)	
Arsenic	7440-38-2	59 0	34	34 U	34	34 U	34	140	34	35 J	34	8 5 J	34
Banum	7440-39-3	335	0 61	861	0.61	1,170	0 61	150	0 61	476	0 61	119	0.61
Cadmum	7440-43-9	0 56 U	0 56	0 56 U	0 56	0 56 U	0.56	0 56 U	0.56	0.78 J	0 56	0 56 U	0 58
Chromium	7440-47-3	26 J	0 89	5 O U	0 89	50 U	0 89	77	0.89	50 U	0.89	5 D U	0.89
Copper	7440-50-8	13 J	0 85	10 0 U	0 85	0 85 U	0 85	10 0 U	0.85	10 0 U	0 85	0 85 U	0 85
Lead	7439-92-1	53	22	42 J	22	30 J	22	42 J	22	5.0	22	39 /	22
Nickel	7440-02-0	10 J	0 95	50 U	0 95	50U	0 95	50 U	0 95	50 U	0 95	5 0 U	0 95
Selenium	7782-49-2	19 J	19	19 U	19	26 J	1.9	20 J	19	19 U	19	1 9 U	19
Total Dissolved Solids (USEPA Method 18	0 1/SM 2540C)												
Date Analyzed		7/1/2014		6/27/2014		6/27/2014		6/27/2014		6/27/2014		6/27/2014	
Analyte	CAS No	(mg/L)		(mg/L)		(mg/L)		(mg/L)		(mg/L)		(mg/L)	
Total Dissolved Solids (TDS)		1,570	50	1,420	50	1,220	50	1700	50	916	50	788	50

Parameters not listed were not detacted in samples

Results in bold stalics denote detections MDL - Method Detection Limit

Flags and Qualifiers

U - Analyte was not detected at or above the Method Detection Limit (MDL)
J - Result is an estimated value

Prepared by LAB Checked by EPW Reviewed by AWD Date 07/17/2014 Date 07/18/2014 Date 08/21/2014

Table 3
Summary of Validated Groundwater Sample Colts - Organics (June 2014 Sampling Event)
State R Dustrary Groundwater Manbarg
Solute for - Bauget, liftots

Monitoring Well		DUP.1	Ą	00P2	ğ	28	ğ	R8 2	M	-83	ď	F8.2	Ŋ	Trip Blank	ğ	Trip Blank	MDL
Leb Sample D		60172342008	L	ş		60172573010	T	60172573011	Ī	60172342009		60172573009	Γ	60172342010		60172573012	
Date Sampled		6/24/2014		6/25/2014		6/26/2014	r	6/26/2014		6/24/2014		6/28/2014		8/24/2014		6/25/2014	
Time Sampled		ļ				9.45	r	12.25		13 50		11 35					
Volatile Organic Compounds (USEPA Method 8260B)	0260B)								١.								
Date Analyzed		7/2/2014	L	7/3/2014		7/3/2014	r	7/3/2014	r	6/26/2014		7/7/2014	Γ	6/28/2014	Ī	7/4/2014	
Analyto	CAS No	(Vin)	5	(1/d/L)		(VBn)		(UDVL)		(nB/L)		(7/6n)		(ngy)		(nayr)	
Acetone	67-64-1	780 ∪	250	105	20	. nos	20		2.0		5.0	njos	50	500	5.0	_ 50[U	50
Benzane	71-43-2	14.8	25	ľ	9	∩050	0.50	0.50	0.50	∩ !os o	0.50	U 50 U	0.50	0.50	050	0.50	0.50
Chlorobenzene	108-90-7	510	25	2,050 D	100	0.00	050	7.0	020	0.50	050		0.50	0.00	0.50	0.50[U	0.50
cls-1 2-Dichloroethene	156-59-2	250	25	794	050	0.00	050	0.50 U	0 20	0.50]U	0.50	0.050	050	0.50	050	0.50	8
Ethyloenzene	100-41-4	250	25	13.5	050	0.00	0.20	∩ 05 0	050	0.50	0 20		050	0.50	0.50	0.50[U	0.20
Methylene Chloride	75-09-2	48 3	25	0 20 0	050	0.050	0.50	0.50 U	0.20	0.50	050	0.050	020	0.50 U	050	0.50[U	0.50
Toluene	108-88-3	250	25		050	0.000	050	0.50	020	0 50 U	050		0.50	0.50 U	0 20	0 50 U	0.50
Viny chloride	75-01-4	250	25	F 96 0	050	0.050	050	0.50	05 0	0 20 0	05 0	0.050	0.50	0 50 U	0.50	0 20 U	0 20
Xylenes Total	1330-20-7	750	7.5	123 J	15	150	15	150	151	15 0	15	150	15	150	1.5	- 15U -	15
Semi-Volatile Organic Compounds (USEPA Nethod 8270C)	thod \$270C)			1)		
Date Prepared		7/1/2014	L	7/2/2014		772/2014	H	772/2014	ľ	771/2014		\$102/2/L					
Date Analyzed		7/3/2014	L	7772014		7/7/2014	l	7/72014		7/3/2014		P102/1/L					
Analyte	CAS No	(nBVL)		(nBr)		(ng/L)		(nb/L)		(ng/L)		(7/6n)					
1,2-Dichlorobenzene	95-50-1	C 87	L	41.	950	0 55 U	950	0.55	0.55	0.55	0.55	n 95 0	0.55	_			
1,3-Dichtorobenzens	541-73-1	737	9	(199	80	⊃ #6 O	980	O 94	76.0	0.94	9	0.040	80	_			•
1,4-Oktylorobenzene	108-46-7	133 J	0 69		000	0.690	69 0	0.69	069	0.69 U	0.69	∩ e9 o	680	_			
4-Chloroanline	106-47-8	78.5	950	0 009'9	280	113	0.56	0.58	0.56	0.56 U	0.56	1 68	980				_
Bra(2-ethylhexyr) phthatate	117-81-7	10 O U	2.6	f 97	28	28∪	2.8	280	2.8	10.01	28	280	28				
Organochlorino Pesticides (USEPA Method 8081A)	81A)																
Date Prepared		7/1/2014	L	7/1/2014		771/2014		77/2014		7/1/2014		712/2014					
Date Analyzed		7/11/2014		7/11/2014		7/11/2014		7/11/2014		7/11/2014		7/3/2014					
Analyte	CAS No	(ng/L)		(no/L)		(na/L)		(UD/L)		(ADV-)		(ug/L)					•
4.4-DDE	72-55-9	012 J	0.050		0500	0.050 U	0 020	D 050 U	0 020	0 050 U	0 050		0 020				~
delta-BNC	319-86-8	0 025 U	0 025		0 025	0 025 U	0 025	0 025 U	0 025	0 025 U	0 025	0 033 J	0 025	_			•
Endosulfan sulfate	1031-07-8	O 050 U	0 050	0 055 7	0000	0 050 0	0 090	0 050 0	0 020	0.050 U	0 050		0050	<u>.</u>			•
gamma-Chlordene	5103-74-2	0 13 J	0 028		0.029	0 029 ∪	0 026	0 020	0.028	0 029 U	0 029	n 620 0	0 029	_			-
Chlorinated Herbicides (USEPA Method 8151A)	9													•			
Date Prepared		6/27/2014	L	7/2/2014		72201	l	7/2/2014		8/27/2014		772/2014					•
Date Analyzed		772/2014		7/4/2014		7/4/2014	r	7/4/2014	Γ	772/2014		7/4/2014					
Analyte	CAS No	(חמייר)	2	(Tydin)		(ng/L)	٢	(nByr)		(ng/L)		(7/dn)					
Total Organic Carbon (USEPA Method 9060)																	3
Date Analyzed		6/27/2014		7/3/2014		7/3/2014	ľ	7/72014		7/7/2014		1/3/2014					•
Analyto	CAS No	(mg/Jr)		(mg/L)		(mg/L)	r	(mp/L)		(mg/L)		(mayr)					,
Total Organic Carbon (TOC)	7440-44-0	32	090	34.5	2 50	njos o	050	0.000	050	0 50 U	050	0 20	0.50	- 444	•	2000	,

Fermination and leader with the control of the cont

Date 07/17/2014 Date 07/18/2014 Date 06/21/2014

Table 4 Summary of Validated Groundwater Sample Data - Inorganics (June 2014 Sampling Event) Site R Quarterly Groundwater Monitoring Solutia Inc. - Sauget, Illinois

Monitoring Well		DUP 1	MDL	DUP 2	MDL	RB 1	MDL	RB 2	MDL	FB 1	MDL	FB 2	MDL
Lab Sample (D		60172342008		60172573008		60172573010		60172573011		80172342009		60172573009	
Date Sampled		6/24/2014		6/25/2014		6/26/2014		6/26/2014		6/24/2014		6/26/2014	
Time Sampled	_		'			9 45		12 25		13 50		11 35	
Mercury (USEPA Method 7470A) _			•									·-	
Date Prepared		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014		7/2/2014	
Date Analyzed .		7/3/2014		7/3/2014		7/3/2014		7/3/2014		7/3/2014 _		7/3/2014	
Analyte	ÇAS No	(ug/L)											
Metals (USEPA Method 6010B)													
Date Prepared		6/27/2014	1	6/30/2014		6/30/2014		6/30/2014		6/27/2014		6/30/2014	
Date Analyzed		7/1/2014		7/3/2014		7/3/2014		7/3/2014		7/1/2014		7/3/2014	
Analyte	CAS No	(ug/L)											
Arsenic	7440-3B-2	34 U	34	41 J	34	34 U	34	34 U	34	3 4 U	34	34 U	34
Barlum	7440-39-3	493	0 61	976	0 61	0 61 U	0 61	061 U	0 61	0 61 U	0 61	0 81 U	0 61
Chromium	7440-47-3	50U	0.89	31 J	0.89	13 J	0 89	0 89 U	0 89	0 89 U	0 89	0 89 U	0 89
Lead	7439-92-1	42 J	22	32 J	22	2 2 U	22						
Nickel	7440-02-0	0 95 U	0 95	18 J	0 95	0 95 U	0 95	0 95 U	0 95	0 95 U	0 95	20 J	0 95
Total Dissolved Solids (USEPA Method 16	0 1/SM 2540C)												
Date Analyzed		8/27/2014		7/1/2014		7/1/2014		7/1/2014		8/27/2014		7/1/2014	
Analyte	CAS No	(mg/L)											
Total Dissolved Solids (TDS)	•	929	5 0	986	50	50 U	50	50 U	50	14 0	50	70 U	50

Parameters not listed were not detected in samples Results in bold Italias denote detections MDL - Method Detection Limit

Flags and Qualifiers

U - Analyte was not detected at or above the Method Detection Limit (MDL) J - Result is an estimated value

Prepared by LAB Checked by EPW Reviewed by AWD Date 07/17/2014 Date 07/18/2014 Date 08/21/2014

APPENDIX B

DATA VALIDATION REPORT

1.0 INTRODUCTION

Golder Associates Inc. (Golder) validated the analytical data for the groundwater samples collected from June 23, 2014 through June 26, 2014 at Solutia Site R in Sauget, Illinois (Site). Samples were collected from a total of twelve (12) groundwater monitoring wells. Field duplicate samples were collected from wells BWMW-4M and BWMW-2M. Two equipment rinsate blanks, two field blanks, and two trip blanks were prepared and shipped for laboratory analysis. The samples collected for analysis are summarized in Table 1. The samples were submitted to Pace Analytical Services, Inc. (Pace Analytical) of Florissant, Missouri which shipped the samples to be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total metals, and general chemistry parameters that night to Lenexa, Kansas via courier. The samples to be analyzed for chlorinated pesticides were shipped for next day delivery to the St. Rose, Louisiana facility by the Pace Analytical Service Center in Florissant, Missouri. The samples to be analyzed for chlorinated herbicides were shipped for next day delivery to the TestAmerica Savannah, Georgia facility by the Pace Analytical Service Center in Florissant, Missouri. The samples were placed into one sample delivery group (SDG) by the laboratory. The SDG is 60172342

The samples were collected and analyzed in accordance with the <u>Field Sampling Plan for the Groundwater Migration Control System, Sauget Area 2 Superfund Site</u> (FSP, URS, January 2003). Samples were analyzed for VOCs, SVOCs, chlorinated pesticides, chlorinated herbicides, total metals, and general chemistry parameters. The general chemistry parameters were total organic carbon (TOC) and total dissolved solids (TDS) Analytical methods used are from U.S Environmental Protection Agency (USEPA) document SW-846, <u>Test Methods for Evaluating Solid Waste</u>, Revision 6 contained in Final Update III August 2002 and listed below

- VOCs were analyzed using <u>Method 8260B Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry</u>
- SVOCs were analyzed by <u>Method 8270C Semi-volatile Organic Compounds by Gas Chromatography/Mass Spectrometry</u>
- Chlorinated Pesticides were analyzed using <u>Method 8081A Organochlorine Pesticides by</u>
 Gas Chromatography
- Chlorinated Herbicides were analyzed using <u>Method 8151A Chlorinated Herbicides by GC</u> <u>Using Methylation or Pentafluorobenzylation Derivatization</u>
- Total metals were analyzed in accordance with <u>Method 6010B Inductively Coupled Plasma-Atomic Emission Spectrometry</u> except for mercury, which was analyzed by <u>Method 7470A, Mercury in Liquid Waste (Manual Cold Vapor Technique)</u>
- The general chemistry parameters were analyzed using standard SW-846 methodologies and EPA methodologies contained in <u>Methods for Chemical Analysis of Water and</u> Wastes, March 1983

	September 2014	-2-	063-9678
	Data validation was performed follow		
	Site (QAPP; URS, January 2003).	·	
	USEPA Contract Laboratory Review, EPA-540-R-08-01, Ju		nal Guidelines for Organic Data
	 <u>USEPA Contract Laboratory P</u> <u>Review</u>, EPA 540-R-04-004, J 		Guidelines for Inorganic Data
	These documents are hereafter reference between the functional guidelines and	the quality control criteria s	pecified in the analytical method,
	the method-specific criteria were used package containing quality control info		repared as a Level 4 data report
	Data qualifiers are defined in Table 2 not qualified and non-detected result	• •	• •
	quantitation limit (organics) or detections sample result was warranted, the most	,	·
	Sections 2 through 7 summarize the sp guidelines were not met Tables 3 throu	•	•
	As specified in the functional guideling professional judgment was used in quantificant and rejection of	ualification of the data. H	lowever, if the non-adherence is
	significant, qualification and rejection of Following data validation, the qualified	•	
	main body of the report.		
Π			

u			
	September 2014	-4-	063-9678
Π	3.0 SEMI-VOLATILE ORGA	NIC COMPOUNDS	
	SVOCs. Field duplicate samp	twelve (12) groundwater monitoring ples were collected from wells BWMW wo field blanks were prepared and ship	/-4M and BWMW-2M Two
	The samples collected for ana	lysis are summarized in Table 1. The were placed into one data package or	samples were submitted to
		SW-846 Method 8270C Samples guidelines. Results of the validation are	-
П	3.1 Data Quality Objective	es	
L	<u>Precision.</u> Goals for laboratory	and field precision were met, except whe	ere noted below
	Accuracy. Goals for accuracy v	vere met, except where noted below	
_	Sample Result Venfication: San	mple results were supported in the raw d	ata.
		n limit goals were achieved for analyses, of target analytes or matrix interference	except where dilutions were
	were reviewed in this data set.	ages were complete for requested analy A total of 1,152 groundwater results we a laboratory completeness of 100%; with	re reported of which all were
	3.2 Major Concerns		
	There were no major concerns	that required rejection of data	
	3.3 Minor Concerns		
	Identified below are the minor of to Table 4 for the specific samp	quality control concerns that required quiles affected by each concern.	alification of the data. Refer
	Reported results with a value reporting limit (RL) were qualifi	greater than the method detection limited with estimated values (J).	it (MDL) and lower than the
	common lab contaminants) r	ed in a blank (i e method, field, rinsate) ule was applied to affected samples. elow five or ten times the blank detec	Results greater than the
	detects (U)		• 2 33 300
Π			

The relative percent difference (RPD) between duplicates and their associated samples should be within 50% Positive affected results were qualified with estimated values (J).

When a sample was analyzed at a dilution, positive affected results were qualified (D/JD)

If the difference between the values of the GC columns was greater than 40% and the lower value

was reported then positive affected results were qualified (P/JP).

5.0 CHLORINATED HERBICIDES

Samples were collected from twelve (12) groundwater monitoring locations and analyzed for chlorinated herbicides. Field duplicate samples were collected from wells BWMW-4M and BWMW-2M. Two equipment rinsate blanks and two field blanks were prepared and shipped for laboratory analysis. The samples collected for analysis are summarized in Table 1. The samples were submitted to Pace Analytical Services, Inc. who then shipped the samples to the Savannah, Georgia TestAmerica facility. Samples were placed into one data package or SDG (60172342), and were prepared and analyzed using SW-846 Method 8151. Samples were validated in accordance with the functional guidelines. Results of the validation are summarized below.

5.1 Data Quality Objectives

Precision. Goals for laboratory and field precision were met

Accuracy: Goals for accuracy were met, except where noted below.

Sample Result Verification: Sample results were supported in the raw data

<u>Detection Limits:</u> The detection limit goals were achieved for analyses, except where dilutions were required due to elevated levels of target analytes or matrix interference

<u>Completeness:</u> The data packages were complete for requested analyses. Eighteen (18) samples were reviewed in this data set. A total of 162 groundwater results were reported of which all were deemed valid. This results in a laboratory completeness of 100%; with an overall completeness of 100%

5.2 Major Concerns

There were no major concerns with the sample analyses to warrant rejection of data

5.3 Minor Concerns

There were no minor concerns with the sample analyses to warrant rejection of data.

	September 2014	-8-	063-9678
Π	6.0 INORGANICS		
	Samples were collected from twelve (inorganics. Field duplicate samples wer equipment rinsate blanks and two field b	re collected from wells BWMV	N-4M and BWMW-2M Two
	The samples collected for analysis are Pace Analytical Service, Inc., were place prepared and analyzed using SW-846	summarized in Table 1 The ced into one data package or	samples were submitted to SDG (60172342), and were
	accordance with the functional guideline		• •
	6.1 Data Quality Objectives		are noted below
П	<u>Precision.</u> Goals for laboratory and field particles. Goals for accuracy were met,	•	ere noted below
	Sample Result Venfication. Sample resu	•	lata.
	<u>Detection Limits:</u> The detection limit gowere found in calibration blanks	pals were achieved for analys	ses, except where detections
	Completeness: The data packages were were reviewed in this data set. A total of deemed valid. This results in a laborate 100%.	of 180 groundwater results we	re reported of which all were
	6.2 Major Concerns		
Π	There were no major concerns that requ	ured rejection of data	
	6.3 Minor Concerns		
	Identified below are the minor quality co		ualification of the data Refer
	to Table 7 for the specific samples affect	·	
	Reported results with a value greater to reporting limit (RL) were qualified with each		ut (MDL) and lower than the
	When a compound was detected in a ble common lab contaminants) rule was method detection limit and below five	applied to affected samples	. Results greater than the
Π	detects (U)		4.
П	The relative percent difference (RPD) be within 50%. Positive affected results we	·	-
		Outdon Assess 1-1	

Septer	mber 2014	-9-	063-9678
7.0 GI	ENERAL CHEMISTRY		
and Ti	DS. Field duplicate samples	were collected from wells B\	locations and analyzed for TOC WMW-4M and BWMW-2M Two
The sa	amples collected for analysis	are summarized in Table 1.	d shipped for laboratory analysis. The samples were submitted to e or SDG (60172342), and were
prepar	•	846 Method 9060C and 254	0C. Samples were validated in
7.1	Data Quality Objectives		
<u>Precis</u> i	ion. Goals for laboratory and fi	eld precision were met	
<u>Accura</u>	acy: Goals for accuracy were n	net	
	e Result Verification Sample	• •	
Compl were r	reviewed in this data set. A to ed valid This results in a labo	were complete for requested tal of 36 groundwater results	analyses Eighteen (18) samples were reported of which all were b, with an overall completeness of
7.2	Major Concerns		
There	were no major quality control o	concerns identified that require	d rejection of data
7.3	Minor Concerns		
There	were no minor concerns with the	he sample analyses to warran	t rejection of data

September 2014	-10-	063-9678
8.0 SUMMARY		
In general accordance with USE	ed during the June 2014 sampling ever	e data required qualifications
positive result was qualified as	at were not achieved, the data were estimated, the analyte should be consestimated reporting limit should be co	sidered present. Similarly, a
	ugh the limit itself may not be precise	

TABLE 1

SAMPLE POINT IDENTIFICATIONS AND SDG NUMBERS GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

SAMPLE POINT I.D.	DATE SAMPLED	VOLATILE ORGANICS	SEMIVOLATILE ORGANICS	PESTICIDES	HERBICIDES	TOTAL INORGANICS	GENERAL CHEMISTRY
Groundwater Sampl	es						
BWMW-1S	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-1M	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-1D	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-2S	6/25/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-2M	6/25/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-2D	6/25/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-3S	6/25/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-3M	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-3D	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-4S	6/23/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-4M	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
BWMW-4D	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
Field Duplicates							
DUP-1	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
DUP-2	6/25/2014	60172342	60172342	60172342	60172342	60172342	60172342
Field Blanks							
FIELD BLANK 1	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
FIELD BLANK 2	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
Trip Blanks							
TRIP BLANK	6/24/2014	60172342	60172342	60172342	60172342	60172342	60172342
TRIP BLANK	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
Rinsate Blanks							
RINSATE BLANK-1	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342
RINSATE BLANK-2	6/26/2014	60172342	60172342	60172342	60172342	60172342	60172342

Notes:

- 1. General Chemistry included total organic carbon (TOC) and total dissolved solids (TDS)
- 2. MS/MSD performed on sample BWMW-1M.

Checked by. LAB 8/14/2014 Reviewed by AWD 8/21/2014

TABLE 2 VALIDATION QUALIFIER DEFINITIONS GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT Organics U - The analyte was analyzed for but not detected. J - The analyte was detected and the result is considered an estimated value. D - The analyte was detected at a dilution. - Compound analyzed at a dilution; result is considered an estimated value. JD JP - The difference between the values of the GC columns was greater than 40% and the lower value is reported. The result is considered an estimated value. Р The difference between the values of the GC columns was greater than 40% and the lower value is reported. **Inorganics** U - The analyte was analyzed for but not detected. J - The analyte was detected and the result is considered an estimated value. Checked by: LAB 8/14/2014 Reviewed by: AWD 8/21/2014

VOLATILE ORGANIC COMPOUNDS:DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION:CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

DATE: JUNE 2014 Project No.: 063-9678

PROJECT NAME: Solutia Site R

MATRIX: Groundwater ANALYSIS: VOC

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

QUALITY CONTROL'	COMPOUND(S)	QUALIFIER:	SAMPLES AFFECTED
Reported result greater than the method detection limit and lower than the reporting limit	Acetone, Benzene, Ethylbenzene, Metheylene chloride, Toluene, and Vinyl chloride	J	BWMW-2M, BWMW-2D, BWMW-4S, FB-1, DUP-1, and DUP-2
The RPD between the duplicate and associated sample is greater than 50%	cis-1,2 Dichloroethene, Methylene chloride, Toulene, Vinyl chloride, and Xylene	J	DUP-1 and DUP-2
Analyte recovery in the laboratory control sample was outside QC limits	Methylene chloride	J	BWMW-3M and BWMW-3D
Compounds analyzed at a dilution	Benzene and Chlorobenzene	D	BWMW-4M and DUP-2

Checked by LAB 8/14/2014 Reviewed by AWD 8/21/2014

SEMI-VOLATILE ORGANIC COMPOUNDS DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2'SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

DATE: JUNE 2014
PROJECT NAME: Solutia Site R

MATRIX: Groundwater ANALYSIS: SVOC

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

QUALITY CONTROL ISSUE;	COMPOUND(S)	QUALIFIER	SAMPLES AFFECTED
Reported result greater than the method detection limit and lower than the reporting limit	4-Chloroaniline, 2-Chlorophenol, Phenol, 1,4- Dichlorobenzene, bis (2-ethylhexyl) phthate, 1,3- Dichlorobenzene, and 1,2-Dichlorobenzene	J	BWMW-1S, BWMW-1M, BWMW-1D, BWMW-2S, BWMW-2M, BWMW-2D, BWMW-3S, BWMW-3M, BWMW-3D, BWMW-4S, BWMW-4M, BWMW-4D, DUP-1, DUP-2, FB-2, and RB-1
Detection in blank (5X rule)	bis (2-ethylhexyi) phthate,	U	BWMW-3M, BWMW-3D, BWMW-4M, BWMW-4D, DUP-1, and FB-1
The RPD between the duplicate and associated sample is greater than 50%	1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene	J	BWMW-4M and DUP-1
Compounds analyzed at a dilution	4-Chloroaniline and 1,2-Dichlorobenzene	D/JD	BWMW-1M, BWMW-2M, BWMW-2D, BWMW-3M, BWMW-3D, BWMW-4M, BWMW-4D, and DUP-2

Checked by LAB 8/14/2014 Reviewed by AWD 8/21/2014

Project No.: 063-9678

CHLORINATED PESTICIDES DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

DATE: JUNE 2014

PROJECT NAME: Solutia Site R

MATRIX: Groundwater

ANALYSIS: Chlorinated Pesticides

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

QUALITY CONTROL ISSUE	COMPOUND(S)	QUALIFIER	SAMPLES AFFECTED
Reported result greater than the method detection limit and lower than the reporting limit	4-4'-DDD, 4-4'-DDT, beta-BHC, delta-BHC, Dieldnn, Endnn, Endosulfan sulfate, and	J	BWMW-1M, BWMW-2D, BWMW-3D, BWMW-4S, DUP-2, and FB-2
The RPD between the duplicate and associated sample is greater than 50%	4-4'-DDE, Dieldrin, Endosulfan I, Endosulfan sulfate, and gamma-Chlordane	J	BWMW-2M, BWMW-4M, DUP-1, and DUP-2
The difference between the values of the GC columns was greater than 40% and lower value was reported	4-4'-DDD, alpha-BHC, delta-BHC, gamma-BHC, alpha-Chlordane, Dieldrin, Endosulfan I, Endosulfan II, Endrin, Endosulfan sulfate, Heptachlor, Heptachlor epoxide, and gamma- Chlordane	P/JP	BWMW-1M, BWMW-2M, BWMW-2D, BWMW-3M, BWMW-3D, BWMW-4M, and DUP-2

Checked by LAB 8/14/2014 Reviewed by AWD 8/21/2014

Project No. : 063-9678

CHLORINATED HERBICIDES DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

DATE: .	JUNE	2014
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PROJECT NAME: Solutia Site R

MATRIX: Groundwater

ANALYSIS: Chlorinated Herbicides

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

QUALITY CONTROL ISSUE	OMPOUND(S)	QUALIFIER	SAMPLES, AFFECTED
None	None	None	None

Checked by LAB 8/14/2014

Project No.: 063-9678

Reviewed by AWD 8/21/2014

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METALS DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014'GROUNDWATER SAMPLING EVENT

DATE: JUNE 2014

PROJECT NAME: Solutia Site R

MATRIX: Groundwater ANALYSIS: Metals

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

QUALITY CONTROL ISSUE	COMPOUND(S)	QUALIFIER	SAMPLES AFFECTED
Reported result greater than the method detection limit and lower than the reporting limit	Arsenic, Chromium, Cadmium, Copper, Lead, Nickel, and Selenium	J	BWMW-1S, BWMW-1M, BWMW-1D, BWMW-2S, BWMW-2M, BWMW-2D, BWMW-3S, BWMW-3M, BWMW-3D, BWMW-4S, BWMW-4M, BWMW-4D, DUP-2, FB-2, and RB-1
Detection in blank (5X rule)	Chromium, Copper and Nickel	U	BWMW-3M, BWMW-3D, BWMW-4S, BWMW-4M, BWMW-4D, and DUP-1
RPD between the duplicate and associated sample is greater than 50%	Copper and Lead	J	BWMW-2M and DUP-1

Checked by LAB 8/14/2014 Reviewed by AWD 8/21/2014

Project No. : 063-9678

GENERAL CHEMISTRY DATA QUALIFIER SUMMARY GROUNDWATER MIGRATION CONTROL SYSTEM SAUGET AREA 2 SUPERFUND SITE JUNE 2014 GROUNDWATER SAMPLING EVENT

DATE: JUNE 2014 Project No.: 063-9678

PROJECT NAME: Solutia Site R MATRIX: Groundwater ANALYSIS: TDS and TOC

SAMPLE DELIVERY GROUP NUMBERS: 60172342

REVIEWER: Lori Bindner

	(S) QUALIFII	ER SAMPLES AFFECTED
None None	None	None

Checked by LAB 8/14/2014 Reviewed by AWD 8/21/2014